

09/711, 782

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FILE 'BIOSIS' ENTERED AT 10:27:41 ON 11 NOV 2003  
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\*\*\* YOU HAVE NEW MAIL \*\*\*

=> s clear? (3a) solution and disrupted biological material  
L1 5 CLEAR? (3A) SOLUTION AND DISRUPTED BIOLOGICAL MATERIAL

=> d l1 bib abs 1-5

L1 ANSWER 1 OF 5 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
AN 2001:514789 BIOSIS  
DN PREV200100514789  
TI Kits for cell concentration and lysate clearance using paramagnetic particles.  
AU Bitner, Rex M. [Inventor]; Smith, Craig E. [Inventor]; White, Douglas H. [Inventor]; Butler, Braeden L. [Inventor]; Sankbeil, Jacqui [Inventor, Reprint author]  
CS Edgerton, WI, USA  
ASSIGNEE: Promega Corporation  
PI US 6284470 September 04, 2001  
SO Official Gazette of the United States Patent and Trademark Office Patents, (Sep. 4, 2001) Vol. 1250, No. 1. e-file.  
CODEN: OGUPE7. ISSN: 0098-1133.  
DT Patent  
LA English  
ED Entered STN: 7 Nov 2001  
Last Updated on STN: 23 Feb 2002  
AB Methods are disclosed for using paramagnetic particles to concentrate or harvest cells. Methods are also disclosed for **clearing a solution of disrupted biological material**, such as a lysate of cells or a homogenate of mammalian tissue. Methods are also disclosed for using paramagnetic particles to isolate target nucleic acids, such as RNA or DNA, from a **solution cleared of disrupted biological material** using the same type or a different type of paramagnetic particle. Kits are also disclosed for use with the various methods of the present invention. Nucleic acids isolated according to the present methods and using the present kits are suitable for immediate use in downstream processing, without further purification.

09567863

L1 ANSWER 2 OF 5 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 2002-537326 [57] WPIDS  
DNC C2002-152316  
TI **Clearing solution** of disrupted material, by providing  
silanized silica matrix covalently attached to several silane ligands, and  
combining matrix with material, target nucleic acid and chaotropic salt to  
form a complex.  
DC B04 D16  
IN BITNER, R M; FLEMMING, R G; KOLLER, S C; SIMPSON, D J  
PA (PROM-N) PROMEGA CORP  
CYC 96  
PI WO 2002038758 A1 20020516 (200257)\* EN 48p  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR  
KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU  
SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
AU 2002025942 A 20020521 (200260)  
EP 1341910 A1 20030910 (200367) EN  
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI TR  
ADT WO 2002038758 A1 WO 2001-US46710 20011108; AU 2002025942 A AU 2002-25942  
20011108; EP 1341910 A1 EP 2001-993684 20011108, WO 2001-US46710 20011108  
FDT AU 2002025942 A Based on WO 2002038758; EP 1341910 A1 Based on WO  
2002038758  
PRAI US 2000-711782 20001113  
AN 2002-537326 [57] WPIDS  
AB WO 200238758 A UPAB: 20020906  
NOVELTY - **Clearing a solution of disrupted  
biological material** (BM), comprising providing first  
silanized silica matrix having a silica solid phase with silane ligands  
covalently attached to it, where each ligand has neutral charge in a  
solution, and combining matrix with target nucleic acid, BM and chaotropic  
salt in the solution to promote selective adsorption of BM to matrix, to  
form a complex, is new.  
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a kit  
comprising, in a single container, several silanized silica magnetic  
particles which comprises a silica solid phase with at least one silane  
ligand covalently attached to the surface of each particle.  
USE - The method is useful for **clearing a solution**  
of a bacterial cell lysate or disrupted plant matter. The method is also  
useful for isolating a target nucleic acid such as plasmid DNA, genomic  
DNA, total RNA or a double-stranded linear DNA with a molecular weight of  
25-60000 base pairs, from a nucleic acid adsorption solution (pH 8)  
comprising a vegetable oil at a concentration of low molecular weight  
alcohol sufficient to promote adsorption of the target nucleic acid to the  
second silanized silica matrix, and 0.2-1.2 M of chaotropic salt such as  
guanidine hydrochloride or guanidine thiocyanate. The adsorption solution  
comprises the target nucleic acid from an agarose gel slice and the  
agarose gel. The method further comprises washing the complex in a wash  
solution (pH 8) having a concentration of 30 % of a low molecular weight  
alcohol, and combining the complex with an elution solution of pH 8,  
especially a buffer of 9 to desorb the target nucleic acid from the  
complex. (All claimed). The method is also useful for isolating a target  
nucleic acid such as mRNA, RNA/DNA hybrids, amplified nucleic acids,  
non-target nucleic acids and non-target components of bacteria, animal  
tissue, blood cells, or other plant material from contaminants including  
proteins, lipids, cellular debris or non-target nucleic acids.  
ADVANTAGE - The method provides efficient **clearing of a  
solution of disrupted biological  
material** and in isolating both low molecular weight DNA molecules

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(i.e. less than 150 base pairs) and larger molecular weight DNA.  
Dwg.0/4

L1 ANSWER 3 OF 5 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 2001-061227 [07] WPIDS  
CR 2000-061985 [05]  
DNC C2001-016883  
TI Rapid and efficient cell harvesting, lysate clearance, homogenate  
clearance or nucleic acid isolation, without the need for filtration or  
centrifugation, using magnetic particles.  
DC B04 C07 D16  
IN BITNER, R M; BUTLER, B L; SANKBEIL, J; SMITH, C E; WHITE, D H  
PA (PROM-N) PROMEGA CORP  
CYC 88  
PI WO 2000070040 A1 20001123 (200107)\* EN 49p  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL  
OA PT SD SE SL SZ TZ UG ZW  
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB  
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU  
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR  
TT UA UG UZ VN YU ZA ZW  
AU 2000023981 A 20001205 (200113)  
US 6284470 B1 20010904 (200154)  
EP 1179058 A1 20020213 (200219) EN  
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI  
JP 2002543835 W 20021224 (200313) 49p  
ADT WO 2000070040 A1 WO 1999-US31207 19991230; AU 2000023981 A AU 2000-23981  
19991230; US 6284470 B1 CIP of US 1998-64449 19980422, Provisional US  
1999-134156P 19990514, Div ex US 1999-475958 19991230, US 2000-645133  
20000824; EP 1179058 A1 EP 1999-967755 19991230, WO 1999-US31207 19991230;  
JP 2002543835 W WO 1999-US31207 19991230, JP 2000-618446 19991230  
FDT AU 2000023981 A Based on WO 2000070040; US 6284470 B1 CIP of US 6194562;  
EP 1179058 A1 Based on WO 2000070040; JP 2002543835 W Based on WO  
2000070040  
PRAI US 1999-134156P 19990514; US 1998-64449 19980422; US 1999-475958  
19991230; US 2000-645133 20000824  
AN 2001-061227 [07] WPIDS  
CR 2000-061985 [05]  
AB WO 200070040 A UPAB: 20030224  
NOVELTY - Magnetically responsive particles are used (i) to harvest or  
concentrate cells or biological tissue, (ii) to clear lysates or  
homogenates of such cells or tissue, or (ii) to isolate target nucleic  
acids (TNAs) from non-target material in a cell lysate.  
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for: (A) using  
magnetic particles (MPs) to concentrate or harvest cells, comprising: (a)  
combining a solution which contains cells with MPs, under conditions such  
that the cells form a complex with the MPs; and (b) isolating the complex  
from the solution by application of magnetic force. (B) **clearing**  
**a solution of disrupted biological**  
**material** (DBM), comprising: (a) providing a solution comprising a  
DBM; (b) combining the solution with MPs under conditions such that the  
DBM forms a complex with the MPs; and (c) separating the complex from the  
solution by application of magnetic force. (C) isolating a TNA from a DBM  
(which comprises the TNA, a first non-target material and a second  
non-target material), comprising: (a) combining a solution of the DBM with  
first MPs under conditions such that the first non-target material forms a  
first complex with the first MPs; (b) separating the first complex from  
the solution of DBM by application of magnetic force, forming a  
**cleared solution** comprising the TNA and the second  
non-target material; (c) combining the **cleared solution**  
with second MPs under conditions such that the TNA adsorbs to the second

MPs, forming a second complex; (d) isolating the second complex from the **cleared solution**; (e) washing the second complex by combining the second complex with a wash solution, and separating the second complex from the wash solution by magnetic force; and (f) combining the washed second complex with an elution solution, under conditions such that the target material is desorbed from the second MPs. (D) kit for isolating a TNA from a DBM, comprising: (a) a first container of first MPs with the capacity to form a complex with non-target material in a solution of DBM comprising the non-target material and the TNA; and (b) a second container of second MPs with the capacity to form a complex with the TNA, under solution conditions designed to promote the specific adsorption of the TNA to the second MPs.

ACTIVITY - None given.

MECHANISM OF ACTION - None given.

USE - The processes can be used to harvest cells or to concentrate cells or biological tissue. They can be used to clear lysates or homogenates of cell or tissue debris, and can be used to isolate TNAs, e.g., plasmid DNA, chromosomal DNA or DNA/RNA hybrids.

ADVANTAGE - The processes are rapid and efficient, and are amenable to automation. Labor-intensive steps, e.g., filtration or centrifugation steps, are not required.

Dwg.0/6

L1 ANSWER 4 OF 5 USPATFULL on STN  
 AN 2001:147681 USPATFULL  
 TI Kits for cell concentration and lysate clearance using paramagnetic particles  
 IN Bitner, Rex M., Cedarburg, WI, United States  
 Smith, Craig E., Oregon, WI, United States  
 White, Douglas H., Madison, WI, United States  
 Butler, Braeden L., Madison, WI, United States  
 Sankbeil, Jacqui, Edgerton, WI, United States  
 PA Promega Corporation, Madison, WI, United States (U.S. corporation)  
 PI US 6284470 B1 20010904  
 AI US 2000-645133 20000824 (9)  
 RLI Division of Ser. No. US 1999-475958, filed on 30 Dec 1999  
 Continuation-in-part of Ser. No. US 1998-64449, filed on 22 Apr 1998,  
 now patented, Pat. No. US 6194562  
 PRAI US 1999-134156P 19990514 (60)  
 DT Utility  
 FS GRANTED  
 EXNAM Primary Examiner: Guzo, David  
 LREP Frenchick, Grady J., King, Karen B. Michael Best & Friedrich LLP  
 CLMN Number of Claims: 5  
 ECL Exemplary Claim: 1  
 DRWN 6 Drawing Figure(s); 3 Drawing Page(s)  
 LN.CNT 1473  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 AB Methods are disclosed for using paramagnetic particles to concentrate or harvest cells. Methods are also disclosed for **clearing a solution of disrupted biological material**, such as a lysate of cells or a homogenate of mammalian tissue. Methods are also disclosed for using paramagnetic particles to isolate target nucleic acids, such as RNA or DNA, from a **solution cleared of disrupted biological material** using the same type or a different type of paramagnetic particle. Kits are also disclosed for use with the various methods of the present invention. Nucleic acids isolated according to the present methods and using the present kits are suitable for immediate use in downstream processing, without further purification.

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CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 5 OF 5 USPATFULL on STN  
AN 2001:56107 USPATFULL  
TI Method of isolating RNA  
IN Ekenberg, Steven J., Mount Horeb, WI, United States  
PA Promega Corporation, Madison, WI, United States (U.S. corporation)  
PI US 6218531 B1 20010417  
WO 9859076 19981230  
AI US 1999-445944 19991220 (9)  
WO 1998-US13180 19980625  
19991220 PCT 371 date  
19991220 PCT 102(e) date  
PRAI US 1997-50719P 19970625 (60)  
US 1996-26582P 19960918 (60)  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Horlick, Kenneth R.; Assistant Examiner: Siew, Jeffrey  
LREP Michael Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.  
CLMN Number of Claims: 16  
ECL Exemplary Claim: 1  
DRWN 4 Drawing Figure(s); 3 Drawing Page(s)  
LN.CNT 1454

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a method for isolating RNA from a biological material comprising RNA and contaminants, wherein: the biological material is disrupted in the presence of a chaotropic agent, the resulting lysate is diluted to precipitate out contaminants, and the precipitate is removed from the lysate. RNA is preferably isolated from the resulting cleared lysate, using a silica matrix to bind and then release RNA bound thereto under particular conditions. The present invention also provides a method for isolating RNA from a solution comprising RNA and DNA, wherein: the RNA and DNA are bound to a silica matrix in the presence of at least one binding enhancer, the DNA is digested with DNase, and the RNA fluted therefrom.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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L2 ANSWER 1 OF 2 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 2002-537326 [57] WPIDS  
DNC C2002-152316  
TI **Clearing solution** of disrupted material, by providing  
**silanized** silica matrix covalently attached to several  
**silane** ligands, and combining matrix with material, target nucleic  
acid and chaotropic salt to form a complex.  
DC B04 D16  
IN BITNER, R M; FLEMMING, R G; KOLLER, S C; SIMPSON, D J  
PA (PROM-N) PROMEGA CORP  
CYC 96  
PI WO 2002038758 A1 20020516 (200257)\* EN 48p  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR  
KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU  
SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
AU 2002025942 A 20020521 (200260)  
EP 1341910 A1 20030910 (200367) EN  
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI TR  
ADT WO 2002038758 A1 WO 2001-US46710 20011108; AU 2002025942 A AU 2002-25942  
20011108; EP 1341910 A1 EP 2001-993684 20011108, WO 2001-US46710 20011108  
FDT AU 2002025942 A Based on WO 2002038758; EP 1341910 A1 Based on WO  
2002038758  
PRAI US 2000-711782 20001113  
AN 2002-537326 [57] WPIDS  
AB WO 200238758 A UPAB: 20020906  
NOVELTY - **Clearing a solution of disrupted  
biological material** (BM), comprising providing first  
**silanized** silica matrix having a silica solid phase with  
**silane** ligands covalently attached to it, where each ligand has  
neutral charge in a solution, and combining matrix with target nucleic  
acid, BM and chaotropic salt in the solution to promote selective  
adsorption of BM to matrix, to form a complex, is new.  
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a kit  
comprising, in a single container, several **silanized** silica  
magnetic particles which comprises a silica solid phase with at least one  
**silane** ligand covalently attached to the surface of each particle.  
USE - The method is useful for **clearing a solution**  
of a bacterial cell lysate or disrupted plant matter. The method is also  
useful for isolating a target nucleic acid such as plasmid DNA, genomic  
DNA, total RNA or a double-stranded linear DNA with a molecular weight of  
25-60000 base pairs, from a nucleic acid adsorption solution (pH 8)  
comprising a vegetable oil at a concentration of low molecular weight  
alcohol sufficient to promote adsorption of the target nucleic acid to the  
second **silanized** silica matrix, and 0.2-1.2 M of chaotropic salt  
such as guanidine hydrochloride or guanidine thiocyanate. The adsorption  
solution comprises the target nucleic acid from an agarose gel slice and  
the agarose gel. The method further comprises washing the complex in a  
wash solution (pH 8) having a concentration of 30 % of a low molecular  
weight alcohol, and combining the complex with an elution solution of pH  
8, especially a buffer of 9 to desorb the target nucleic acid from the  
complex. (All claimed). The method is also useful for isolating a target  
nucleic acid such as mRNA, RNA/DNA hybrids, amplified nucleic acids,  
non-target nucleic acids and non-target components of bacteria, animal  
tissue, blood cells, or other plant material from contaminants including  
proteins, lipids, cellular debris or non-target nucleic acids.  
ADVANTAGE - The method provides efficient **clearing** of a  
**solution of disrupted biological  
material** and in isolating both low molecular weight DNA molecules

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(i.e. less than 150 base pairs) and larger molecular weight DNA.  
Dwg.0/4

=> d 12 2 bib abs

L2 ANSWER 2 OF 2 USPATFULL on STN  
AN 2001:147681 USPATFULL  
TI Kits for cell concentration and lysate clearance using paramagnetic particles  
IN Bitner, Rex M., Cedarburg, WI, United States  
Smith, Craig E., Oregon, WI, United States  
White, Douglas H., Madison, WI, United States  
Butler, Braeden L., Madison, WI, United States  
Sankbeil, Jacqui, Edgerton, WI, United States  
PA Promega Corporation, Madison, WI, United States (U.S. corporation)  
PI US 6284470 B1 20010904  
AI US 2000-645133 20000824 (9)  
RLI Division of Ser. No. US 1999-475958, filed on 30 Dec 1999  
Continuation-in-part of Ser. No. US 1998-64449, filed on 22 Apr 1998,  
now patented, Pat. No. US 6194562  
PRAI US 1999-134156P 19990514 (60)  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Guzo, David  
LREP Frenchick, Grady J., King, Karen B. Michael Best & Friedrich LLP  
CLMN Number of Claims: 5  
ECL Exemplary Claim: 1  
DRWN 6 Drawing Figure(s); 3 Drawing Page(s)  
LN.CNT 1473  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB Methods are disclosed for using paramagnetic particles to concentrate or harvest cells. Methods are also disclosed for **clearing a solution of disrupted biological material**, such as a lysate of cells or a homogenate of mammalian tissue. Methods are also disclosed for using paramagnetic particles to isolate target nucleic acids, such as RNA or DNA, from a **solution cleared of disrupted biological material** using the same type or a different type of paramagnetic particle. Kits are also disclosed for use with the various methods of the present invention. Nucleic acids isolated according to the present methods and using the present kits are suitable for immediate use in downstream processing, without further purification.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

09567863

=> d 112 bib abs 1-22

L12 ANSWER 1 OF 22 USPATFULL on STN  
AN 2003:294281 USPATFULL  
TI Nanoparticles having oligonucleotides attached thereto and uses therefor  
IN Park, So-Jung, Austin, TX, UNITED STATES  
Taton, Thomas Andrew, Little Canada, MN, UNITED STATES  
Mirkin, Chad A., Wilmette, IL, UNITED STATES  
PI US 2003207296 A1 20031106  
AI US 2002-266983 A1 20021008 (10)  
RLI Continuation-in-part of Ser. No. US 2001-8978, filed on 7 Dec 2001,  
PENDING Continuation-in-part of Ser. No. US 2001-927777, filed on 10 Aug  
2001, PENDING Continuation-in-part of Ser. No. US 2001-820279, filed on  
28 Mar 2001, PENDING Continuation-in-part of Ser. No. US 2001-760500,  
filed on 12 Jan 2001, PENDING Continuation-in-part of Ser. No. US  
2000-603830, filed on 26 Jun 2000, GRANTED, Pat. No. US 6506564  
Continuation-in-part of Ser. No. US 1999-344667, filed on 25 Jun 1999,  
GRANTED, Pat. No. US 6361944 Continuation-in-part of Ser. No. US  
1999-240755, filed on 29 Jan 1999, ABANDONED Continuation-in-part of  
Ser. No. WO 1997-US12783, filed on 21 Jul 1997, PENDING  
PRAI US 2001-327864P 20011009 (60)  
US 2000-254418P 20001208 (60)  
US 2000-255236P 20001211 (60)  
US 2001-282640P 20010409 (60)  
US 2000-224631P 20000811 (60)  
US 2000-192699P 20000328 (60)  
US 2000-254392P 20001208 (60)  
US 2000-255235P 20001211 (60)  
US 2000-176409P 20000113 (60)  
US 2000-213906P 20000626 (60)  
US 2000-200161P 20000426 (60)  
US 1996-31809P 19960729 (60)  
DT Utility  
FS APPLICATION  
LREP MCDONNELL BOEHNEN HULBERT & BERGHOFF, 300 SOUTH WACKER DRIVE, SUITE  
3200, CHICAGO, IL, 60606  
CLMN Number of Claims: 677  
ECL Exemplary Claim: 1  
DRWN 75 Drawing Page(s)  
LN.CNT 12981  
AB The invention provides methods of detecting a nucleic acid. The methods  
comprise contacting the nucleic acid with one or more types of particles  
having oligonucleotides attached thereto. In one embodiment of the  
method, the oligonucleotides are attached to nanoparticles and have  
sequences complementary to portions of the sequence of the nucleic acid.  
A detectable change (preferably a color change) is brought about as a  
result of the hybridization of the oligonucleotides on the nanoparticles  
to the nucleic acid. The invention also provides compositions and kits  
comprising particles. The invention further provides methods of  
synthesizing unique nanoparticle-oligonucleotide conjugates, the  
conjugates produced by the methods, and methods of using the conjugates.  
In addition, the invention provides nanomaterials and nanostructures  
comprising nanoparticles and methods of nanofabrication utilizing  
nanoparticles. Finally, the invention provides a method of separating a  
selected nucleic acid from other nucleic acids.

L12 ANSWER 2 OF 22 USPATFULL on STN  
AN 2003:200988 USPATFULL  
TI Microdevices for screening biomolecules  
IN Wagner, Peter, Belmont, CA, UNITED STATES  
Ault-Riche, Dana, Hayward, CA, UNITED STATES



09567863

Nock, Steffen, Redwood City, CA, UNITED STATES  
Itin, Christian, Menlo Park, CA, UNITED STATES  
Tan, Ming, Danville, CA, UNITED STATES  
PI US 2003138973 A1 20030724  
AI US 2002-328925 A1 20021223 (10)  
RLI Continuation of Ser. No. US 2002-134025, filed on 24 Apr 2002, PENDING  
Continuation-in-part of Ser. No. US 1999-353554, filed on 14 Jul 1999,  
PENDING Continuation-in-part of Ser. No. US 1998-115397, filed on 14 Jul  
1998, GRANTED, Pat. No. US 6576478  
DT Utility  
FS APPLICATION  
LREP TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH  
FLOOR, SAN FRANCISCO, CA, 94111-3834  
CLMN Number of Claims: 46  
ECL Exemplary Claim: 1  
DRWN 9 Drawing Page(s)  
LN.CNT 2446

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods and devices for the parallel, in vitro screening of biomolecular  
activity using miniaturized microfabricated devices are provided. The  
biomolecules immobilized on the surface of the devices of the present  
invention include proteins, polypeptides, polynucleotides,  
polysaccharides, phospholipids, and related unnatural polymers of  
**biological** relevance. These devices are useful drug development,  
functional proteomics and clinical diagnostics and are preferably used  
for the parallel screening of families of related proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 3 OF 22 USPATFULL on STN  
AN 2003:127030 USPATFULL  
TI Nanoparticles having oligonucleotides attached thereto and uses therefor  
IN Mirkin, Chad A., Wilmette, IL, UNITED STATES  
Letsinger, Robert L., Wilmette, IL, UNITED STATES  
Taton, Thomas Andrew, Little Canada, MN, UNITED STATES  
Lu, Gang, Mt Prospect, IL, UNITED STATES  
PI US 2003087242 A1 20030508  
AI US 2001-8978 A1 20011207 (10)  
RLI Continuation-in-part of Ser. No. US 2001-927777, filed on 10 Aug 2001,  
PENDING Continuation-in-part of Ser. No. US 2001-820279, filed on 28 Mar  
2001, PENDING Continuation-in-part of Ser. No. US 2001-760500, filed on  
12 Jan 2001, PENDING Continuation-in-part of Ser. No. US 2000-603830,  
filed on 26 Jun 2000, PENDING Continuation-in-part of Ser. No. US  
1999-344667, filed on 25 Jun 1999, GRANTED, Pat. No. US 6361944  
Continuation-in-part of Ser. No. US 1999-240755, filed on 29 Jan 1999,  
ABANDONED Continuation-in-part of Ser. No. WO 1997-US12783, filed on 21  
Jul 1997, UNKNOWN  
PRAI US 1996-31809P 19960729 (60)  
US 2000-176409P 20000113 (60)  
US 2000-192699P 20000328 (60)  
US 2000-200161P 20000426 (60)  
US 2000-213906P 20000626 (60)  
US 2000-224631P 20000811 (60)  
US 2000-254392P 20001208 (60)  
US 2000-254418P 20001208 (60)  
US 2000-255235P 20001211 (60)  
US 2000-255236P 20001211 (60)  
US 2001-282640P 20010409 (60)  
DT Utility  
FS APPLICATION  
LREP MCDONNELL BOEHNEN HULBERT & BERGHOFF, 300 SOUTH WACKER DRIVE, SUITE  
3200, CHICAGO, IL, 60606

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CLMN Number of Claims: 626

ECL Exemplary Claim: 1

DRWN 71 Drawing Page(s)

LN.CNT 12308

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides methods of detecting a nucleic acid. The methods comprise contacting the nucleic acid with one or more types of particles having oligonucleotides attached thereto. In one embodiment of the method, the oligonucleotides are attached to nanoparticles and have sequences complementary to portions of the sequence of the nucleic acid. A detectable change (preferably a color change) is brought about as a result of the hybridization of the oligonucleotides on the nanoparticles to the nucleic acid. The invention also provides compositions and kits comprising particles. The invention further provides methods of synthesizing unique nanoparticle-oligonucleotide conjugates, the conjugates produced by the methods, and methods of using the conjugates. In addition, the invention provides nanomaterials and nanostructures comprising nanoparticles and methods of nanofabrication utilizing nanoparticles. Finally, the invention provides a method of separating a selected nucleic acid from other nucleic acids.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 4 OF 22 USPATFULL on STN

AN 2003:127016 USPATFULL

TI ELECTRONIC DETECTION OF NUCLEIC ACIDS USING MONOLAYERS

IN BAMDAD, CYNTHIA, SHARON, MA, UNITED STATES

YU, CHANGJUN, PASADENA, CA, UNITED STATES

PI US 2003087228 A1 20030508

AI US 1999-245105 A1 19990127 (9)

PRAI US 1998-84425P 19980506 (60)

US 1998-84509P 19980506 (60)

DT Utility

FS APPLICATION

LREP FLEHR HOHBACH TEST ALBRITTON & HERBERT, ROBIN M SILVA, SUITE 3400 FOUR EMBARCADERO CENTER, SAN FRANCISCO, CA, 941114187

CLMN Number of Claims: 38

ECL Exemplary Claim: 1

DRWN 50 Drawing Page(s)

LN.CNT 4573

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention is directed to the electronic detection of nucleic acids using self-assembled monolayers.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 5 OF 22 USPATFULL on STN

AN 2003:268164 USPATFULL

TI Arrays of proteins and methods of use thereof

IN Wagner, Peter, Belmont, CA, United States

Ault-Riche, Dana, Palo Alto, CA, United States

Nock, Steffen, Redwood City, CA, United States

Itin, Christian, Menlo Park, CA, United States

PA Zyomyx, Incorporated, Hayward, CA, United States (U.S. corporation)

PI US 6630358 B1 20031007

AI US 2000-570363 20000512 (9)

RLI Division of Ser. No. US 1999-353215, filed on 14 Jul 1999, now abandoned Continuation-in-part of Ser. No. US 1998-115455, filed on 14 Jul 1998

DT Utility

FS GRANTED

EXNAM Primary Examiner: Chin, Christopher L.

LREP Townsend, Townsend & Crew LLP

09567863

CLMN Number of Claims: 3  
ECL Exemplary Claim: 1  
DRWN 9 Drawing Figure(s); 8 Drawing Page(s)  
LN.CNT 2367

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Protein arrays for the parallel, in vitro screening of biomolecular activity are provided. Methods of using the protein arrays are also disclosed. On the arrays, a **plurality** of different proteins, such as different members of a single protein family, are immobilized on one or more organic thinfilms on the substrate surface. The protein arrays are particularly useful in drug development, proteomics, and clinical diagnostics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 6 OF 22 USPATFULL on STN  
AN 2003:203373 USPATFULL  
TI Electronic methods for the detection of analytes utilizing monolayers  
IN Yu, Changjun, Pasadena, CA, United States  
PA Clinical Micro Sensors, Inc., Pasadena, CA, United States (U.S. corporation)  
PI US 6600026 B1 20030729  
AI US 1999-306653 19990506 (9)  
RLI Continuation of Ser. No. US 1998-135183, filed on 17 Aug 1998  
PRAI US 1998-84652P 19980506 (60)  
US 1998-84509P 19980506 (60)  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Riley, Jezia  
LREP Silva, Robin M., Kosslak, Renee M., Dorsey & Whitney, LLP  
CLMN Number of Claims: 12  
ECL Exemplary Claim: 1  
DRWN 93 Drawing Figure(s); 41 Drawing Page(s)  
LN.CNT 4573

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to the use of self-assembled monolayers with mixtures of conductive oligomers and insulators to detect target analytes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 7 OF 22 USPATFULL on STN  
AN 2003:197071 USPATFULL  
TI Microdevices for screening biomolecules  
IN Wagner, Peter, Belmont, CA, United States  
Ault-Riche, Dana, Palo Alto, CA, United States  
Nock, Steffen, Redwood City, CA, United States  
Itin, Christian, Menlo Park, CA, United States  
PA Zyomyx, Inc., Hayward, CA, United States (U.S. corporation)  
PI US 6596545 B1 20030722  
AI US 1999-353554 19990714 (9)  
RLI Continuation-in-part of Ser. No. US 1998-115397, filed on 14 Jul 1998  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Chin, Christopher L.  
LREP Townsend & Townsend Crew LLP  
CLMN Number of Claims: 4  
ECL Exemplary Claim: 1  
DRWN 9 Drawing Figure(s); 8 Drawing Page(s)  
LN.CNT 2357

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Devices for the parallel, in vitro screening of biomolecular activity

using miniaturized microfabricated devices are provided. The biomolecules immobilized on the surface of the devices of the present invention include proteins, polypeptides, polynucleotides, polysaccharides, phospholipids, and related unnatural polymers of **biological** relevance. These devices are useful drug development, functional proteomics and clinical diagnostics and are preferably used for the parallel screening of families of related proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 8 OF 22 USPATFULL on STN

AN 2002:307830 USPATFULL

TI Movement of biomolecule-coated nanoparticles in an electric field

IN Mirkin, Chad A., Wilmette, IL, UNITED STATES

Letsinger, Robert L., Wilmette, IL, UNITED STATES

Mucic, Robert C., Glendale, CA, UNITED STATES

Storhoff, James J., Evanston, IL, UNITED STATES

Elghanian, Robert, Chicago, IL, UNITED STATES

Taton, Thomas Andrew, Chicago, IL, UNITED STATES

Garimella, Viswanadham, Evanston, IL, UNITED STATES

Li, Zhi, Evanston, IL, UNITED STATES

Park, So-Jung, Evanston, IL, UNITED STATES

PI US 2002172953 A1 20021121

AI US 2001-927777 A1 20010810 (9)

RLI Continuation-in-part of Ser. No. US 2001-820279, filed on 28 Mar 2001, PENDING Continuation-in-part of Ser. No. US 2001-760500, filed on 12 Jan 2001, PENDING Continuation-in-part of Ser. No. US 2000-603830, filed on 26 Jun 2000, PENDING Continuation-in-part of Ser. No. US 1999-344667, filed on 25 Jun 1999, GRANTED, Pat. No. US 6361944 Continuation-in-part of Ser. No. US 1999-240755, filed on 29 Jan 1999, ABANDONED Continuation-in-part of Ser. No. WO 1997-US12783, filed on 21 Jul 1997, UNKNOWN

PRAI US 1996-31809P 19960729 (60)

US 2000-176409P 20000113 (60)

US 2000-200161P 20000426 (60)

US 2000-192699P 20000328 (60)

US 2000-254392P 20001208 (60)

US 2000-255235P 20001211 (60)

US 2000-224631P 20000811 (60)

DT Utility

FS APPLICATION

LREP Emily Miao, McDonnell Boehnen Hulbert & Berghoff, 32nd Floor, 300 S. Wacker Drive, Chicago, IL, 60606

CLMN Number of Claims: 598

ECL Exemplary Claim: 1

DRWN 64 Drawing Page(s)

LN.CNT 11435

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides methods of detecting a nucleic acid. The methods comprise contacting the nucleic acid with one or more types of particles having oligonucleotides attached thereto. In one embodiment of the method, the oligonucleotides are attached to nanoparticles and have sequences complementary to portions of the sequence of the nucleic acid. A detectable change (preferably a color change) is brought about as a result of the hybridization of the oligonucleotides on the nanoparticles to the nucleic acid. The invention also provides compositions and kits comprising particles. The invention further provides methods of synthesizing unique nanoparticle-oligonucleotide conjugates, the conjugates produced by the methods, and methods of using the conjugates. In addition, the invention provides nanomaterials and nanostructures comprising nanoparticles and methods of nanofabrication utilizing nanoparticles. Finally, the invention provides a method of separating a

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selected nucleic acid from other nucleic acids.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 9 OF 22 USPATFULL on STN  
AN 2002:206239 USPATFULL  
TI Arrays of proteins and methods of use thereof  
IN Wagner, Peter, Belmont, CA, UNITED STATES  
Ault-Riche, Dana, Palo Alto, CA, UNITED STATES  
Nock, Steffen, Redwood City, CA, UNITED STATES  
Itin, Christian, Menlo Park, CA, UNITED STATES  
PI US 2002110933 A1 20020815  
AI US 2002-113964 A1 20020329 (10)  
RLI Continuation of Ser. No. US 1999-353215, filed on 14 Jul 1999, ABANDONED  
Continuation-in-part of Ser. No. US 1998-115455, filed on 14 Jul 1998,  
GRANTED, Pat. No. US 6406921  
DT Utility  
FS APPLICATION  
LREP Zyomyx, 26101 Research Road, Hayward, CA, 94545  
CLMN Number of Claims: 39  
ECL Exemplary Claim: 1  
DRWN 8 Drawing Page(s)  
LN.CNT 2275

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Protein arrays for the parallel, in vitro screening of biomolecular activity are provided. Methods of using the protein arrays are also disclosed. On the arrays, a **plurality** of different proteins, such as different members of a single protein family, are immobilized on one or more organic thinfilms on the substrate surface. The protein arrays are particularly useful in drug development, proteomics, and clinical diagnostics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 10 OF 22 USPATFULL on STN  
AN 2002:206238 USPATFULL  
TI Microdevices for screening biomolecules  
IN Wagner, Peter, Belmont, CA, UNITED STATES  
Ault-Riche, Dana, Palo Alto, CA, UNITED STATES  
Nock, Steffen, Redwood City, CA, UNITED STATES  
Itin, Christian, Menlo Park, CA, UNITED STATES  
PI US 2002110932 A1 20020815  
AI US 2002-112982 A1 20020329 (10)  
RLI Continuation of Ser. No. US 1999-353554, filed on 14 Jul 1999, PENDING  
Continuation-in-part of Ser. No. US 1998-115397, filed on 14 Jul 1998,  
PENDING  
DT Utility  
FS APPLICATION  
LREP Zyomyx, 26101 Research Road, Hayward, CA, 94545  
CLMN Number of Claims: 45  
ECL Exemplary Claim: 1  
DRWN 8 Drawing Page(s)  
LN.CNT 2363

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods and devices for the parallel, in vitro screening of biomolecular activity using miniaturized microfabricated devices are provided. The biomolecules immobilized on the surface of the devices of the present invention include proteins, polypeptides, polynucleotides, polysaccharides, phospholipids, and related unnatural polymers of **biological** relevance. These devices are useful drug development, functional proteomics and clinical diagnostics and are preferably used for the parallel screening of families of related proteins.

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CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 11 OF 22 USPATFULL on STN  
AN 2002:12264 USPATFULL  
TI AMPLIFICATION OF NUCLEIC ACIDS WITH ELECTRONIC DETECTION  
IN KAYYEM, JON FAIZ, PASADENA, CA, UNITED STATES  
BAMDAD, CYNTHIA, SAN MARINO, CA, UNITED STATES  
PI US 2002006643 A1 20020117  
AI US 1999-238351 A1 19990127 (9)  
RLI Continuation of Ser. No. US 1998-14304, filed on 27 Jan 1998, GRANTED,  
Pat. No. US 6063573 Continuation of Ser. No. US 1998-135183, filed on 17  
Aug 1998, PENDING  
PRAI US 1998-84425P 19980506 (60)  
US 1998-84509P 19980506 (60)  
US 1996-28102P 19961009 (60)  
US 1998-73011P 19980129 (60)  
DT Utility  
FS APPLICATION  
LREP FLEHR HOHBACH TEST ALBRITTON & HERBERT, SUITE 3400, FOUR EMBARCADERO  
CENTER, SAN FRANCISCO, CA, 941114187  
CLMN Number of Claims: 20  
ECL Exemplary Claim: 1  
DRWN 60 Drawing Page(s)  
LN.CNT 5702

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to compositions and methods useful in the  
detection of nucleic acids using a variety of amplification techniques,  
including both signal amplification and target amplification. Detection  
proceeds through the use of an electron transfer moiety (ETM) that is  
associated with the nucleic acid, either directly or indirectly, to  
allow electronic detection of the ETM using an electrode.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 12 OF 22 USPATFULL on STN  
AN 2002:3837 USPATFULL  
TI Mixed-bed **solid phase** and its use in the isolation  
of nucleic acids  
IN Smith, Craig E., Oregon, WI, UNITED STATES  
Holmes, Diana L., Crystal Lake, IL, UNITED STATES  
Simpson, Daniel J., Middleton, WI, UNITED STATES  
Katzhendler, Jehoshua, Jerusalem, ISRAEL  
Bitner, Rex M., Cedarburg, WI, UNITED STATES  
Grosch, Josephine C., Mazomaine, WI, UNITED STATES  
PA Promega Corporation., Madison, WI, UNITED STATES (U.S. corporation)  
PI US 2002001812 A1 20020103  
US 6376194 B2 20020423  
AI US 2001-912045 A1 20010724 (9)  
RLI Division of Ser. No. US 1999-312139, filed on 14 May 1999, GRANTED, Pat.  
No. US 6270970  
DT Utility  
FS APPLICATION  
LREP MICHAEL BEST & FRIEDRICH, LLP, ONE SOUTH PINCKNEY STREET, P O BOX 1806,  
MADISON, WI, 53701  
CLMN Number of Claims: 62  
ECL Exemplary Claim: 1  
DRWN 3 Drawing Page(s)  
LN.CNT 2532

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Mixed-bed solid phases are provided, with methods for using such solid  
phases to isolate target nucleic acids, such as plasmid DNA, chromosomal

DNA, RNA, or nucleic acids generated by enzymatic amplification from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. The mixed-bed solid phases of this invention are mixtures of at least two different solid phases, each of which has a capacity to bind to the target nucleic acid under different solution conditions, and the capacity to release the nucleic acid under similar elution conditions. By exchanging solution conditions according to the methods of this invention, one can remove contaminants from the target nucleic acid bound to the mixed-bed **solid phase**, then elute the target nucleic acid in an elution buffer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 13 OF 22 USPATFULL on STN  
 AN 2002:290788 USPATFULL  
 TI Arrays of proteins and methods of use thereof  
 IN Wagner, Peter, Belmont, CA, United States  
 Ault-Riche, Dana, Palo Alto, CA, United States  
 Nock, Steffen, Redwood City, CA, United States  
 Itin, Christian, Menlo Park, CA, United States  
 PA Zyomyx, Incorporated, Hayward, CA, United States (U.S. corporation)  
 PI US 6475808 B1 20021105  
 AI US 1999-353215 19990714 (9)  
 RLI Continuation-in-part of Ser. No. US 1998-115455, filed on 14 Jul 1998  
 DT Utility  
 FS GRANTED  
 EXNAM Primary Examiner: Chin, Christopher L.  
 LREP Hager, Alicia J., Heinkel, Gregory L.  
 CLMN Number of Claims: 3  
 ECL Exemplary Claim: 1  
 DRWN 9 Drawing Figure(s); 8 Drawing Page(s)  
 LN.CNT 2339

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Protein arrays for the parallel, in vitro screening of biomolecular activity are provided. Methods of using the protein arrays are also disclosed. On the arrays, a **plurality** of different proteins, such as different members of a single protein family, are immobilized on one or more organic thinfilms on the substrate surface. The protein arrays are particularly useful in drug development, proteomics, and clinical diagnostics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 14 OF 22 USPATFULL on STN  
 AN 2001:170870 USPATFULL  
 TI Reduction of nonspecific hybridization by using novel base-pairing schemes  
 IN Collins, Mark L., Walnut Creek, CA, United States  
 Horn, Thomas, Berkeley, CA, United States  
 Sheridan, Patrick J., San Leandro, CA, United States  
 Warner, Brian D., Martinez, CA, United States  
 Urdea, Michael S., Alamo, CA, United States  
 PI US 2001026918 A1 20011004  
 AI US 2000-752213 A1 20001228 (9)  
 RLI Division of Ser. No. US 1998-115566, filed on 14 Jul 1998, GRANTED, Pat. No. US 6232462 Continuation of Ser. No. US 1997-794153, filed on 3 Feb 1997, GRANTED, Pat. No. US 5780610 Continuation of Ser. No. US 1995-435547, filed on 5 May 1995, ABANDONED Continuation of Ser. No. US 1994-298073, filed on 30 Aug 1994, GRANTED, Pat. No. US 5681702  
 DT Utility  
 FS APPLICATION  
 LREP Dianne E. Reed, REED & ASSOCIATES, 3282 Alpine Road, Portola Valley, CA,

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94028

CLMN Number of Claims: 27

ECL Exemplary Claim: 1

DRWN 3 Drawing Page(s)

LN.CNT 1779

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods are provided for substantially reducing background signals encountered in nucleic acid hybridization assays. The method is premised on the elimination or significant reduction of the phenomenon of nonspecific hybridization, so as to provide a detectable signal which is produced only in the presence the target polynucleotide of interest. In addition, a novel method for the chemical synthesis of isoguanosine or 2'-deoxy-isoguanosine is provided. The invention also has applications in antisense and aptamer therapeutics and drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 15 OF 22 USPATFULL on STN

AN 2001:134201 USPATFULL

TI pH dependent ion exchange matrix and method of use in the isolation of nucleic acids

IN Smith, Graig E., Oregon, WI, United States

Holmes, Diana L., Crystal Lake, IL, United States

Simpson, Daniel J., Middleton, WI, United States

Katzenhendler, Jehoshua, Jerusalem, Israel

Bitner, Rex M., Cedarburg, WI, United States

Grosch, Josephine C., Mazomainie, WI, United States

PA Promega Corporation, Madison, WI, United States (U.S. corporation)

PI US 2001014650 A1 20010816

AI US 2001-813077 A1 20010320 (9)

RLI Division of Ser. No. US 1999-312172, filed on 14 May 1999, PENDING

DT Utility

FS APPLICATION

LREP MICHAEL BEST & FRIEDRICH, LLP, ONE SOUTH PINCKNEY STREET, P O BOX 1806, MADISON, WI, 53701

CLMN Number of Claims: 100

ECL Exemplary Claim: 1

DRWN 4 Drawing Page(s)

LN.CNT 2094

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB pH dependent ion exchange matrices are provided, with methods for making such matrices, and methods for using such matrices to isolate a target nucleic acid, such as plasmid DNA, chromosomal DNA, or RNA from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. Each pH dependent ion exchange matrix of this invention comprises at least two different ion exchange functional groups, one of which is capable of acting as an anion exchanger at a first pH, and the other of which is capable of acting as a cation exchanger at a second, higher pH. The matrix has an overall neutral charge in a pH range between the first and second pH. The pH dependent ion exchange matrices of the present invention are designed to bind to the target nucleic acid at a pH wherein the overall charge of the matrix is positive, and to release the target nucleic acid as the pH of the surrounding solution is increased. The target nucleic acid can be released from the pH dependent matrix in little or no salt and at about a neutral pH. The matrices and methods of this invention enable one to isolate a target nucleic acid in very few steps, without the use of hazardous chemicals. Target nucleic acids isolated using the pH dependent ion exchange matrices according to the present invention can be used immediately without further extraction or isolation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.



L12 ANSWER 16 OF 22 USPATFULL on STN

AN 2001:191265 USPATFULL

TI pH dependent ion exchange matrix and method of use in the isolation of nucleic acids

IN Smith, Craig E., Oregon, WI, United States

Holmes, Diana L., Crystal Lake, IL, United States

Simpson, Daniel J., Middleton, WI, United States

Katzenhendler, Jehoshua, Jerusalem, IL, United States

Bitner, Rex M., Cedarburg, WI, United States

Grosch, Josephine C., Mazomainie, WI, United States

PA Promega Corporation, Madison, WI, United States (U.S. corporation)

PI US 6310199 B1 20011030

AI US 1999-312172 19990514 (9)

DT Utility

FS GRANTED

EXNAM Primary Examiner: Marschel, Ardin H.

LREP Michael Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.

CLMN Number of Claims: 70

ECL Exemplary Claim: 1

DRWN 4 Drawing Figure(s); 4 Drawing Page(s)

LN.CNT 2054

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB pH dependent ion exchange matrices are provided, with methods for making such matrices, and methods for using such matrices to isolate a target nucleic acid, such as plasmid DNA, chromosomal DNA, or RNA from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. Each pH dependent ion exchange matrix of this invention comprises at least two different ion exchange functional groups, one of which is capable of acting as an anion exchanger at a first pH, and the other of which is capable of acting as a cation exchanger at a second, higher pH. The matrix has an overall neutral charge in a pH range between the first and second pH. The pH dependent ion exchange matrices of the present invention are designed to bind to the target nucleic acid at a pH wherein the overall charge of the matrix is positive, and to release the target nucleic acid as the pH of the surrounding solution is increased. The target nucleic acid can be released from the pH dependent matrix in little or no salt and at about a neutral pH. The matrices and methods of this invention enable one to isolate a target nucleic acid in very few steps, without the use of hazardous chemicals. Target nucleic acids isolated using the pH dependent ion exchange matrices according to the present invention can be used immediately without further extraction or isolation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 17 OF 22 USPATFULL on STN

AN 2001:147681 USPATFULL

TI Kits for cell concentration and lysate clearance using paramagnetic particles

IN Bitner, Rex M., Cedarburg, WI, United States

Smith, Craig E., Oregon, WI, United States

White, Douglas H., Madison, WI, United States

Butler, Braeden L., Madison, WI, United States

Sankbeil, Jacqui, Edgerton, WI, United States

PA Promega Corporation, Madison, WI, United States (U.S. corporation)

PI US 6284470 B1 20010904

AI US 2000-645133 20000824 (9)

RLI Division of Ser. No. US 1999-475958, filed on 30 Dec 1999

Continuation-in-part of Ser. No. US 1998-64449, filed on 22 Apr 1998, now patented, Pat. No. US 6194562

PRAI US 1999-134156P 19990514 (60)

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DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Guzo, David  
LREP Frenchick, Grady J., King, Karen B. Michael Best & Friedrich LLP  
CLMN Number of Claims: 5  
ECL Exemplary Claim: 1  
DRWN 6 Drawing Figure(s); 3 Drawing Page(s)  
LN.CNT 1473

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods are disclosed for using paramagnetic particles to concentrate or harvest cells. Methods are also disclosed for **clearing** a **solution** of disrupted **biological** material, such as a lysate of cells or a homogenate of mammalian tissue. Methods are also disclosed for using paramagnetic particles to isolate target nucleic acids, such as RNA or DNA, from a **solution cleared** of disrupted **biological** material using the same type or a different type of paramagnetic particle. Kits are also disclosed for use with the various methods of the present invention. Nucleic acids isolated according to the present methods and using the present kits are suitable for immediate use in downstream processing, without further purification.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 18 OF 22 USPATFULL on STN

AN 2001:125743 USPATFULL

TI Mixed-bed **solid phase** and its use in the isolation of nucleic acids

IN Smith, Craig E., Oregon, WI, United States  
Holmes, Diana L., Crystal Lake, IL, United States  
Simpson, Daniel J., Middleton, WI, United States  
Katzenhendler, Jehoshua, Jerusalem, IL, United States  
Bitner, Rex M., Cedarburg, WI, United States  
Grosch, Josephine C., Mazomaine, WI, United States

PA Promega Corporation, Madison, WI, United States (U.S. corporation)

PI US 6270970 B1 20010807

AI US 1999-312139 19990514 (9)

DT Utility

FS GRANTED

EXNAM Primary Examiner: Jones, W. Gary; Assistant Examiner: Chakrabarti, Arun

LREP Micheal Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.

CLMN Number of Claims: 19

ECL Exemplary Claim: 1

DRWN 5 Drawing Figure(s); 3 Drawing Page(s)

LN.CNT 2302

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Mixed-bed solid phases are provided, with methods for using such solid phases to isolate target nucleic acids, such as plasmid DNA, chromosomal DNA, RNA, or nucleic acids generated by enzymatic amplification from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. The mixed-bed solid phases of this invention are mixtures of at least two different solid phases, each of which has a capacity to bind to the target nucleic acid under different solution conditions, and the capacity to release the nucleic acid under similar elution conditions. By exchanging solution conditions according to the methods of this invention, one can remove contaminants from the target nucleic acid bound to the mixed-bed **solid phase**, then elute the target nucleic acid in an elution buffer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 19 OF 22 USPATFULL on STN

09567863

AN 2001:71696 USPATFULL  
TI Reduction of nonspecific hybridization by using novel base-pairing schemes  
IN Collins, Mark L., Walnut Creek, CA, United States  
Horn, Thomas, Berkeley, CA, United States  
Sheridan, Patrick J, San Leandro, CA, United States  
Warner, Brian D., Martinez, CA, United States  
Urdea, Michael S., Alamo, CA, United States  
PA Bayer Corporation, East Walpole, MA, United States (U.S. corporation)  
PI US 6232462 B1 20010515  
AI US 1998-115566 19980714 (9)  
RLI Continuation of Ser. No. US 1997-794153, filed on 3 Feb 1997, now patented, Pat. No. US 5780610 Continuation of Ser. No. US 1995-435547, filed on 5 May 1995, now abandoned Continuation of Ser. No. US 1994-298073, filed on 30 Aug 1994, now patented, Pat. No. US 5681002, issued on 28 Oct 1997  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Fredman, Jeffrey  
LREP Reed, Dianne E., Hartrum, J. ElinReed & Associates  
CLMN Number of Claims: 6  
ECL Exemplary Claim: 1  
DRWN 3 Drawing Figure(s); 2 Drawing Page(s)  
LN.CNT 1867  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB Methods are provided for substantially reducing background signals encountered in nucleic acid hybridization assays. The method is premised on the elimination or significant reduction of the phenomenon of nonspecific hybridization, so as to provide a detectable signal which is produced only in the presence the target polynucleotide of interest. In addition, a novel method for the chemical synthesis of isoguanosine or 2'-deoxy-isoguanosine is provided. The invention also has applications in antisense and aptamer therapeutics and drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 20 OF 22 USPATFULL on STN  
AN 1998:82885 USPATFULL  
TI Reduction of nonspecific hybridization by using novel base-pairing schemes  
IN Collins, Mark L., 2991 Santos La., Apt. 301, Walnut Creek, CA, United States 94507  
Horn, Thomas, 876 Spruce St., Berkeley, CA, United States 94707  
Sheridan, Patrick J., 2008 Horne St., San Leandro, CA, United States 94577  
Warner, Brian D., 1034 Alhambra Ave., Martinez, CA, United States 94553  
Urdea, Michael S., 100 Bunce Meadow Rd., Alamo, CA, United States 94507  
PI US 5780610 19980714  
AI US 1997-794153 19970203 (8)  
RLI Continuation of Ser. No. US 1995-435547, filed on 5 May 1995, now abandoned which is a continuation of Ser. No. US 1994-298073, filed on 30 Aug 1994, now patented, Pat. No. US 5681702  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Zitomer, Stephanie W.; Assistant Examiner: Fredman, Jeffrey  
LREP Barovsky, Kenneth, Goldman, Kenneth M., Blackburn, Robert P.  
CLMN Number of Claims: 7  
ECL Exemplary Claim: 1  
DRWN 3 Drawing Figure(s); 2 Drawing Page(s)  
LN.CNT 1844  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

09567863

AB Methods are provided for substantially reducing background signals encountered in nucleic acid hybridization assays. The method is premised on the elimination or significant reduction of the phenomenon of nonspecific hybridization, so as to provide a detectable signal which is produced only in the presence the target polynucleotide of interest. In addition, a novel method for the chemical synthesis of isoguanosine or 2'-deoxy-isoguanosine is provided. The invention also has applications in antisense and aptamer therapeutics and drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 21 OF 22 USPATFULL on STN

AN 1998:4133 USPATFULL

TI Process for separating and recovering an anionic dye from an aqueous solution

IN Rogers, Robin, DeKalb, IL, United States

Horwitz, E. Philip, Naperville, IL, United States

Bond, Andrew H., Tallahassee, FL, United States

PA Arch Development Corp., Chicago, IL, United States (U.S. corporation)  
Northern Illinois University, DeKalb, IL, United States (U.S. corporation)

PI US 5707525 19980113

AI US 1996-655251 19960605 (8)

RLI Continuation-in-part of Ser. No. US 1995-477330, filed on 7 Jun 1995, now patented, Pat. No. US 5603834 And Ser. No. US 1995-478382, filed on 7 Jun 1995

DT Utility

FS Granted

EXNAM Primary Examiner: Therkorn, Ernest G.

LREP Welsh & Katz, Ltd.

CLMN Number of Claims: 12

ECL Exemplary Claim: 12

DRWN 7 Drawing Figure(s); 7 Drawing Page(s)

LN.CNT 1981

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A solid/liquid phase process for the separation and recovery of an anionic dye from an aqueous solution is disclosed. The **solid phase** comprises separation particles having surface-bonded poly(ethylene glycol) groups, whereas the aqueous solution from which the anionic dye molecules are separated contains a poly(ethylene glycol) liquid/liquid biphas-forming amount of a dissolved lyotropic salt. After contact between the aqueous solution and separation particles, the anionic dye is bound to the particles. The bound anionic dye molecules are freed from the separation particles by contacting the anionic dye-bound particles with an aqueous solution that does not contain a poly(ethylene glycol) liquid/liquid biphas-forming amount of a dissolved lyotropic salt to form an aqueous anionic dye solution whose anionic dye concentration is preferably higher than that of the initial dye-containing solution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 22 OF 22 USPATFULL on STN

AN 97:99156 USPATFULL

TI Reduction of nonspecific hybridization by using novel base-pairing schemes

IN Collins, Mark L., Walnut Creek, CA, United States

Horn, Thomas, Berkeley, CA, United States

Sheridan, Patrick J., San Leandro, CA, United States

Warner, Brian D., Martinez, CA, United States

Urdea, Michael S., Alamo, CA, United States

PA Chiron Corporation, Emeryville, CA, United States (U.S. corporation)

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PI US 5681702 19971028  
AI US 1994-298073 19940830 (8)  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Elliott, George G.; Assistant Examiner: Fredman, Jeffrey  
LREP Reed & Associates, Goldman, Kenneth M., Blackburn, Robert P.  
CLMN Number of Claims: 8  
ECL Exemplary Claim: 1  
DRWN 3 Drawing Figure(s); 2 Drawing Page(s)  
LN.CNT 1852

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods are provided for substantially reducing background signals encountered in nucleic acid hybridization assays. The method is premised on the elimination or significant reduction of the phenomenon of nonspecific hybridization, so as to provide a detectable signal which is produced only in the presence the target polynucleotide of interest. In addition, a novel method for the chemical synthesis of isoguanosine or 2'-deoxy-isoguanosine is provided. The invention also has applications in antisense and aptamer therapeutics and drug discovery.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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(FILE 'HOME' ENTERED AT 10:27:08 ON 11 NOV 2003)

FILE 'BIOSIS, MEDLINE, CAPLUS, WPIDS, USPATFULL' ENTERED AT 10:27:41 ON 11 NOV 2003

L1 5 S CLEAR? (3A) SOLUTION AND DISRUPTED BIOLOGICAL MATERIAL  
L2 2 S L1 AND SILAN?  
L3 10363 S CLEAR? (4A) SOLUTION? AND BIOLOGICAL  
L4 19 S L3 AND SILICA SOLID  
L5 3 S L4 AND SILAN?  
L6 6012 S L3 AND SILICA  
L7 1 S L6 AND SILANE LIGANDS  
L8 524 S L6 AND SILAN?  
L9 35 S L8 AND CHAOTROP?  
L10 25 S L9 AND SOLID PHASE  
L11 22 S L10 AND PLURALITY  
L12 22 DUP REM L11 (0 DUPLICATES REMOVED)

=> s l12 and silan? (6a) solid phase

L13 4 L12 AND SILAN? (6A) SOLID PHASE

=> d l13 bib abs 1-4

L13 ANSWER 1 OF 4 USPATFULL on STN

AN 2002:3837 USPATFULL

TI Mixed-bed **solid phase** and its use in the isolation of nucleic acids

IN Smith, Craig E., Oregon, WI, UNITED STATES  
Holmes, Diana L., Crystal Lake, IL, UNITED STATES  
Simpson, Daniel J., Middleton, WI, UNITED STATES  
Katzhendler, Jehoshua, Jerusalem, ISRAEL  
Bitner, Rex M., Cedarburg, WI, UNITED STATES  
Grosch, Josephine C., Mazomainie, WI, UNITED STATES

PA Promega Corporation., Madison, WI, UNITED STATES (U.S. corporation)

PI US 2002001812 A1 20020103

US 6376194 B2 20020423

AI US 2001-912045 A1 20010724 (9)

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RLI Division of Ser. No. US 1999-312139, filed on 14 May 1999, GRANTED, Pat.  
No. US 6270970  
DT Utility  
FS APPLICATION  
LREP MICHAEL BEST & FRIEDRICH, LLP, ONE SOUTH PINCKNEY STREET, P O BOX 1806,  
MADISON, WI, 53701  
CLMN Number of Claims: 62  
ECL Exemplary Claim: 1  
DRWN 3 Drawing Page(s)  
LN.CNT 2532

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Mixed-bed solid phases are provided, with methods for using such solid phases to isolate target nucleic acids, such as plasmid DNA, chromosomal DNA, RNA, or nucleic acids generated by enzymatic amplification from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. The mixed-bed solid phases of this invention are mixtures of at least two different solid phases, each of which has a capacity to bind to the target nucleic acid under different solution conditions, and the capacity to release the nucleic acid under similar elution conditions. By exchanging solution conditions according to the methods of this invention, one can remove contaminants from the target nucleic acid bound to the mixed-bed **solid phase**, then elute the target nucleic acid in an elution buffer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 2 OF 4 USPATFULL on STN  
AN 2001:191265 USPATFULL  
TI pH dependent ion exchange matrix and method of use in the isolation of nucleic acids  
IN Smith, Craig E., Oregon, WI, United States  
Holmes, Diana L., Crystal Lake, IL, United States  
Simpson, Daniel J., Middleton, WI, United States  
Katzenhendler, Jehoshua, Jerusalem, IL, United States  
Bitner, Rex M., Cedarburg, WI, United States  
Grosch, Josephine C., Mazomainie, WI, United States  
PA Promega Corporation, Madison, WI, United States (U.S. corporation)  
PI US 6310199 B1 20011030  
AI US 1999-312172 19990514 (9)  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Marschel, Ardin H.  
LREP Michael Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.  
CLMN Number of Claims: 70  
ECL Exemplary Claim: 1  
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)  
LN.CNT 2054

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB pH dependent ion exchange matrices are provided, with methods for making such matrices, and methods for using such matrices to isolate a target nucleic acid, such as plasmid DNA, chromosomal DNA, or RNA from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. Each pH dependent ion exchange matrix of this invention comprises at least two different ion exchange functional groups, one of which is capable of acting as an anion exchanger at a first pH, and the other of which is capable of acting as a cation exchanger at a second, higher pH. The matrix has an overall neutral charge in a pH range between the first and second pH. The pH dependent ion exchange matrices of the present invention are designed to bind to the target nucleic acid at a pH wherein the overall charge of the matrix is positive, and to release the target nucleic acid as the pH of the surrounding solution is increased. The target nucleic acid can be released from the pH dependent

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matrix in little or no salt and at about a neutral pH. The matrices and methods of this invention enable one to isolate a target nucleic acid in very few steps, without the use of hazardous chemicals. Target nucleic acids isolated using the pH dependent ion exchange matrices according to the present invention can be used immediately without further extraction or isolation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 3 OF 4 USPATFULL on STN  
AN 2001:134201 USPATFULL  
TI pH dependent ion exchange matrix and method of use in the isolation of nucleic acids  
IN Smith, Graig E., Oregon, WI, United States  
Holmes, Diana L., Crystal Lake, IL, United States  
Simpson, Daniel J., Middleton, WI, United States  
Katzenhendler, Jehoshua, Jerusalem, Israel  
Bitner, Rex M., Cedarburg, WI, United States  
Grosch, Josephine C., Mazomainie, WI, United States  
PA Promega Corporation, Madison, WI, United States (U.S. corporation)  
PI US 2001014650 A1 20010816  
AI US 2001-813077 A1 20010320 (9)  
RLI Division of Ser. No. US 1999-312172, filed on 14 May 1999, PENDING  
DT Utility  
FS APPLICATION  
LREP MICHAEL BEST & FRIEDRICH, LLP, ONE SOUTH PINCKNEY STREET, P O BOX 1806, MADISON, WI, 53701  
CLMN Number of Claims: 100  
ECL Exemplary Claim: 1  
DRWN 4 Drawing Page(s)  
LN.CNT 2094

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB pH dependent ion exchange matrices are provided, with methods for making such matrices, and methods for using such matrices to isolate a target nucleic acid, such as plasmid DNA, chromosomal DNA, or RNA from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. Each pH dependent ion exchange matrix of this invention comprises at least two different ion exchange functional groups, one of which is capable of acting as an anion exchanger at a first pH, and the other of which is capable of acting as a cation exchanger at a second, higher pH. The matrix has an overall neutral charge in a pH range between the first and second pH. The pH dependent ion exchange matrices of the present invention are designed to bind to the target nucleic acid at a pH wherein the overall charge of the matrix is positive, and to release the target nucleic acid as the pH of the surrounding solution is increased. The target nucleic acid can be released from the pH dependent matrix in little or no salt and at about a neutral pH. The matrices and methods of this invention enable one to isolate a target nucleic acid in very few steps, without the use of hazardous chemicals. Target nucleic acids isolated using the pH dependent ion exchange matrices according to the present invention can be used immediately without further extraction or isolation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 4 OF 4 USPATFULL on STN  
AN 2001:125743 USPATFULL  
TI Mixed-bed **solid phase** and its use in the isolation of nucleic acids  
IN Smith, Craig E., Oregon, WI, United States  
Holmes, Diana L., Crystal Lake, IL, United States  
Simpson, Daniel J., Middleton, WI, United States

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Katzenhendler, Jehoshua, Jerusalem, IL, United States  
Bitner, Rex M., Cedarburg, WI, United States  
Grosch, Josephine C., Mazomainie, WI, United States  
PA Promega Corporation, Madison, WI, United States (U.S. corporation)  
PI US 6270970 B1 20010807  
AI US 1999-312139 19990514 (9)  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Jones, W. Gary; Assistant Examiner: Chakrabarti, Arun  
LREP Micheal Best & Friedrich LLP, Frenchick, Grady J., King, Karen B.  
CLMN Number of Claims: 19  
ECL Exemplary Claim: 1  
DRWN 5 Drawing Figure(s); 3 Drawing Page(s)  
LN.CNT 2302  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB Mixed-bed solid phases are provided, with methods for using such solid phases to isolate target nucleic acids, such as plasmid DNA, chromosomal DNA, RNA, or nucleic acids generated by enzymatic amplification from contaminants, including proteins, lipids, cellular debris, or other nucleic acids. The mixed-bed solid phases of this invention are mixtures of at least two different solid phases, each of which has a capacity to bind to the target nucleic acid under different solution conditions, and the capacity to release the nucleic acid under similar elution conditions. By exchanging solution conditions according to the methods of this invention, one can remove contaminants from the target nucleic acid bound to the mixed-bed **solid phase**, then elute the target nucleic acid in an elution buffer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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